

## **Building your Headband and Electrodes**

### **Parts needed:**

- a.) Copper foil sheet
- b.) 1" x 30" polyester webbed strap
- c.) Hot glue gun with glue sticks
- d.) 1/2" x 10" wide ribbon
- e.) 1/2" x 6" Velcro
- f.) Shielded twisted wires (three)
- g.) 1" plastic ladder lock slider side release buckle
- h.) Scissors

**\*\*You can purchase copper foil sheets at:**

**[http://www.onlinemetals.com/merchant.cfm?pid=13550&step=4&showunits=inches&id=129&top\\_cat=0](http://www.onlinemetals.com/merchant.cfm?pid=13550&step=4&showunits=inches&id=129&top_cat=0)**

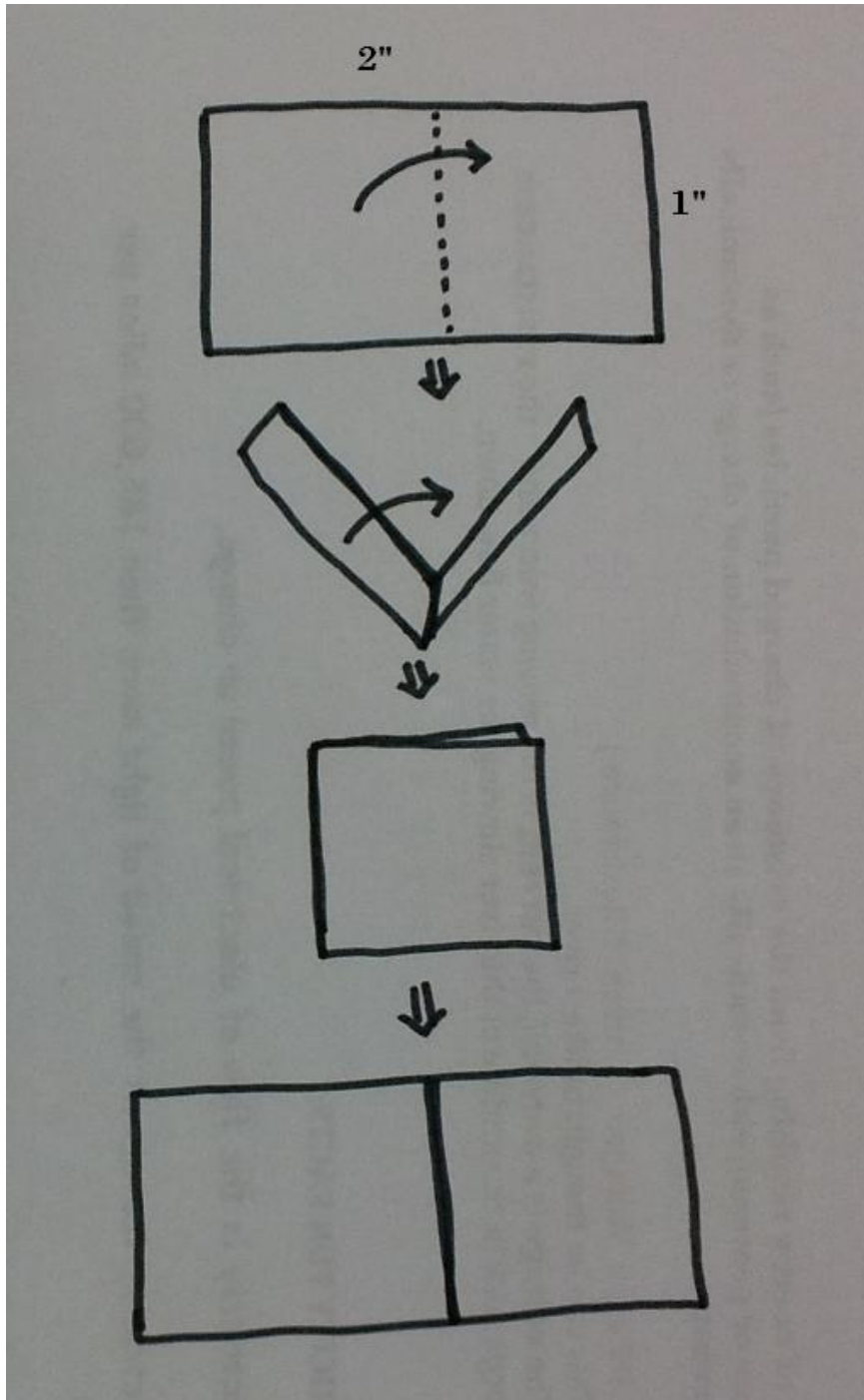
**\*\*You can purchase polyester wedded strap and plastic ladder lock slider side release buckle from Walmart or other craft stores.**

Step 1:

Remove shielding from three twisted wires, about 8" from end. Strip the ends of the three wires, exposing about 3/8" of metal.

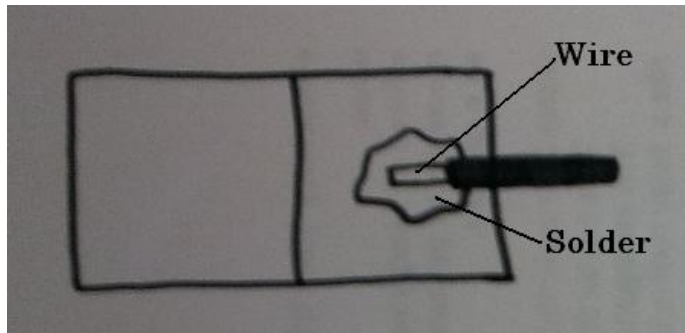
Step 2:

Cut the copper foil into three 1" x 2" pieces. Once cut, fold the pieces into 1" x 1" squares. Open back up, for step 2.



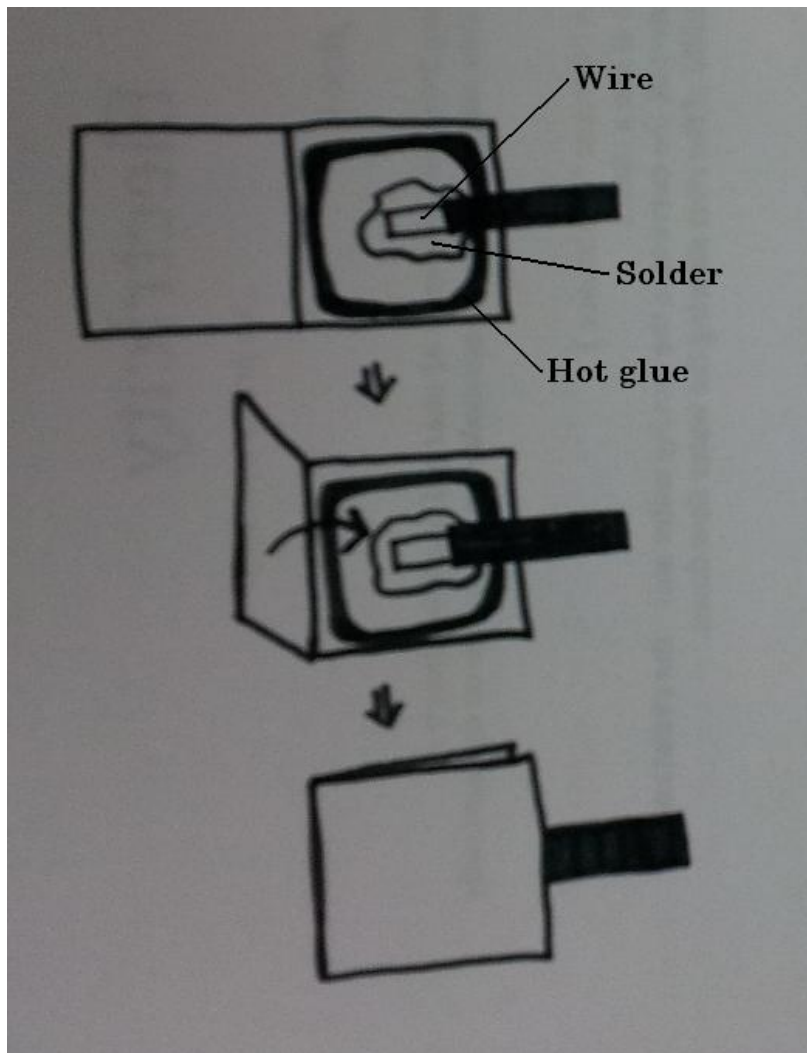
Step 3:

Solder exposed metal of wires to the three pads. Solder to one side as seen below. If you do not have the ability to solder, then you can tape the wire to the copper, just make sure that it is very tight.



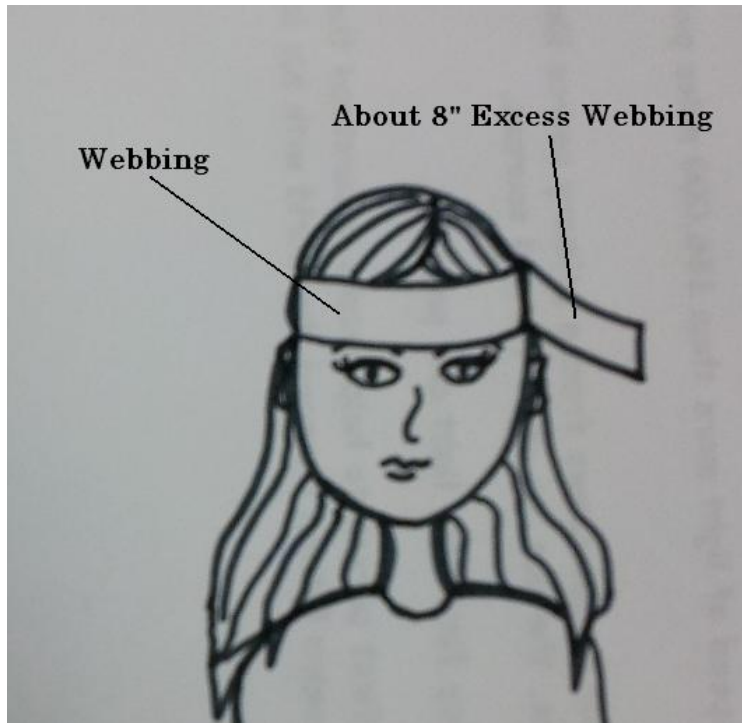
Step 4:

Heat up the hot glue gun. Once heated, apply hot glue to the perimeter of the 1" x 1" square, the side with the soldered wire. Quickly, fold the rectangle to create a square.



Step 5:

Take the polyester webbed strap (webbing) and wrap it around the circumference your head. Allow for about 8" of extra webbing and cut. Use hot glue to little line both ends of the frayed webbing.

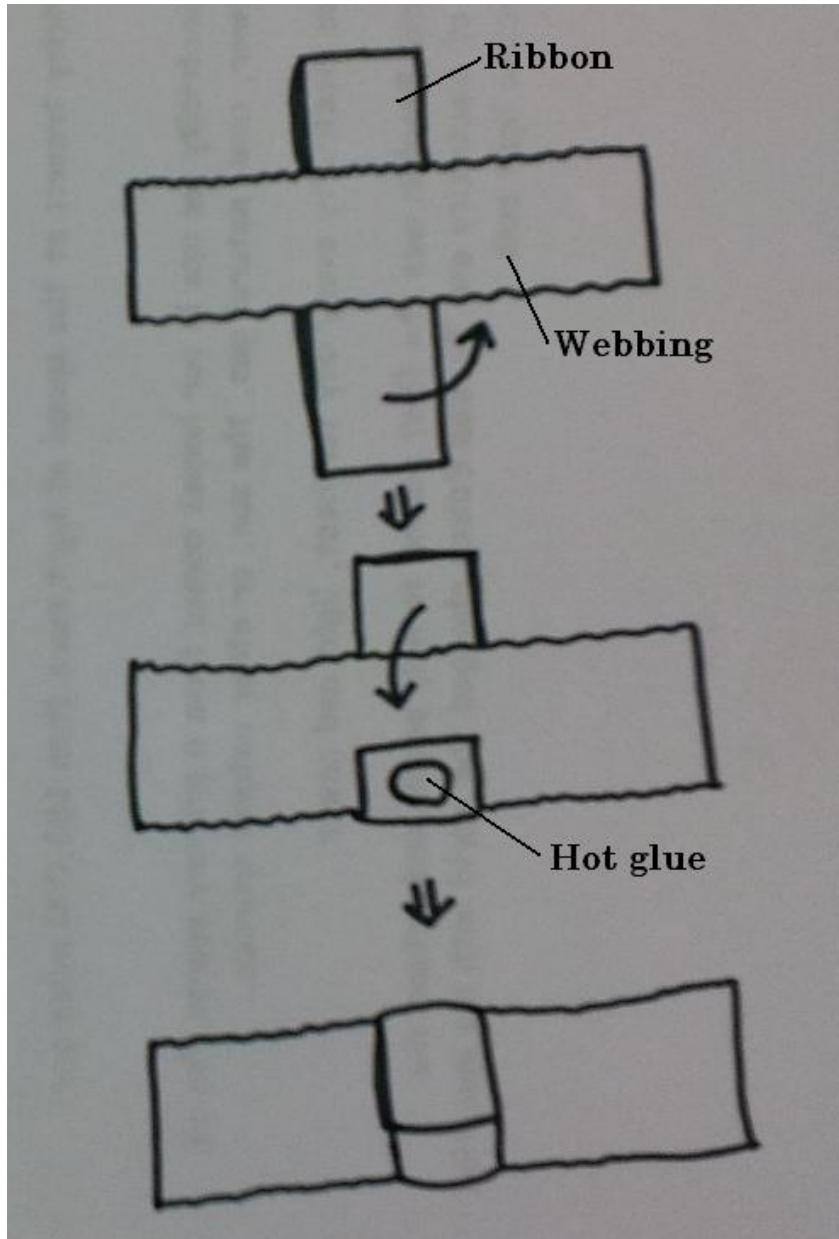


Step 6:

Follow the directions on ladder lock slide side release buckle package for the webbing. Use hot glue instead of sewing webbing together.

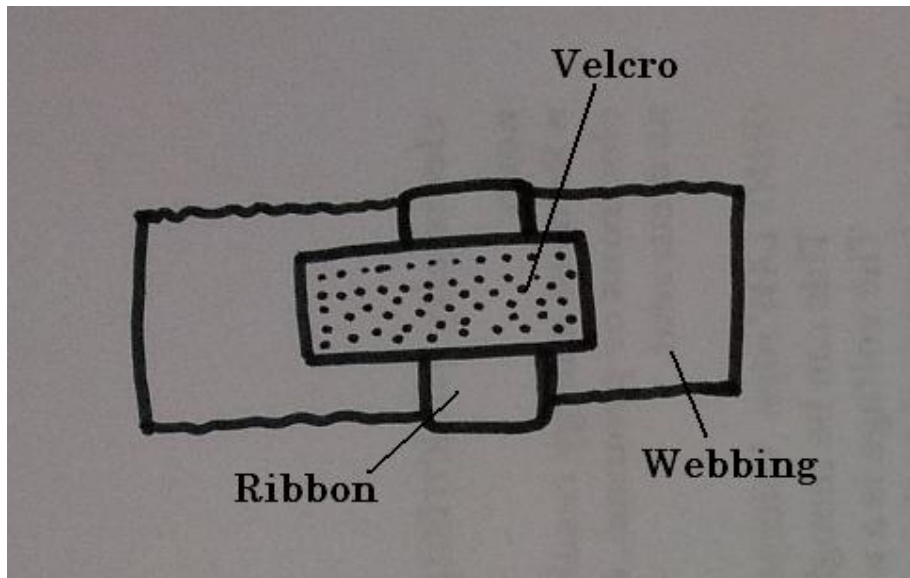
Step 7:

Wrap the ribbon around the webbing. Place a glob of hot glue on one side of the ribbon and quickly place other side of ribbon on top. Cut excess ribbon. Repeat this step three more times. These should be able to slide easily on the webbing, yet they should also be tight enough where they won't move once headband is pulled tight.



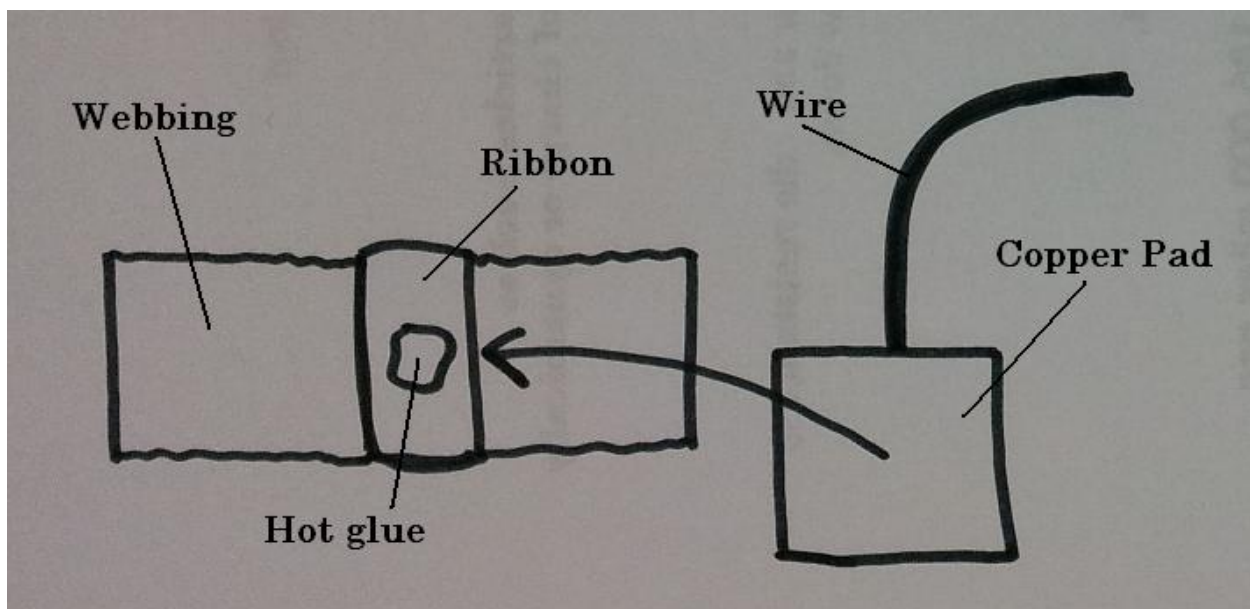
Step 8:

Cut Velcro to be 3/8" by 1". Hot glue one side to the piezoelectric speaker. Hot glue other side to the right most of the ribbon bands on the webbing. Make sure that the ribbon is vertical and the Velcro is horizontal.



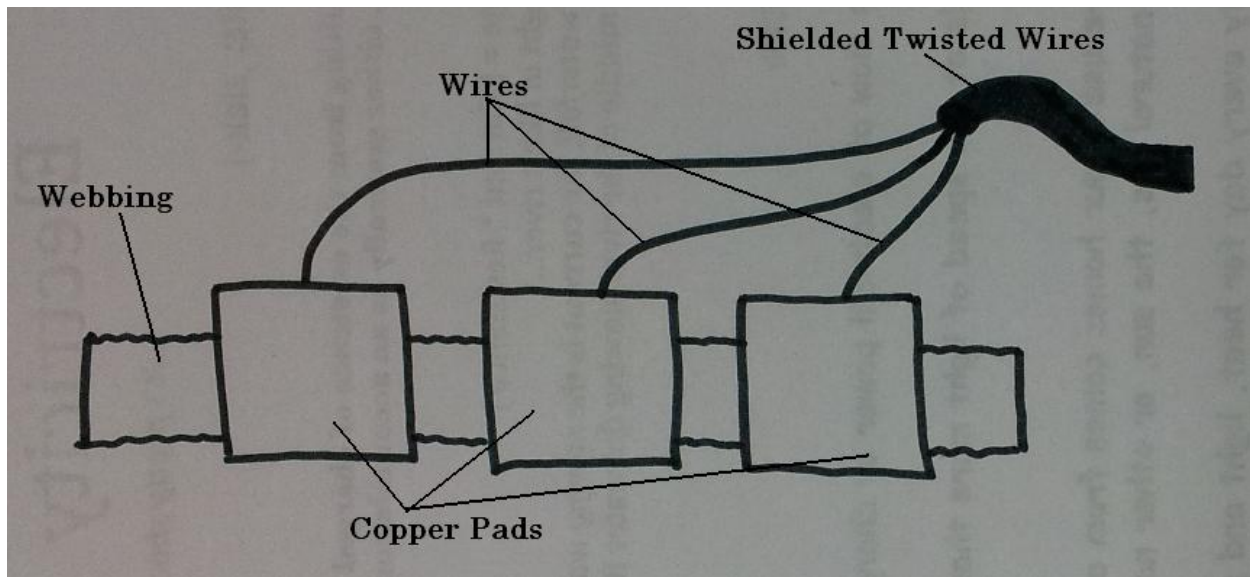
Step 9:

Hot glue the three copper pads onto the remaining three ribbon bands. Make sure to either have color coded wires, or may note of which pad and wire are going on the middle of the three ribbons.



Step 10:

Loop the end of the webbing through the plastic ladder lock slider side release buckle.



Your headband and electrodes are now finished. You can adjust the placement of the speaker to line up with your ear. You can also position the electrodes in the correct spot per individual. The headband should be relatively tight once on. Make sure not to pull too tight to the point of getting a headache, but the tighter the better for the signal.



## FINAL PRODUCT PHOTOS

